

Claims:

- 1) A composition comprising a liposome or lipid complex and an entrapped active platinum compound, the liposome or lipid complex containing one or more lipids, wherein the active platinum compound to lipid ratio is from 1:50 to 1:2 by weight.
- 2) The composition of claim 1, wherein the active platinum compound to lipid ratio is from 1:50 to 1:5 by weight.
- 3) The composition of claim 1, wherein the active platinum compound to lipid ratio is from 1:50 to 1:10 by weight.
- 4) The composition of claim 1, wherein the active platinum compound is cisplatin.
- 5) The composition of claim 1, wherein the active platinum compound to lipid ratio is from 1:25 to 1:15 by weight.
- 6) The composition of claim 5, wherein the active platinum compound is cisplatin.
- 7) The composition of claim 6, the one or more lipids comprise DPPC.
- 8) The composition of claim 7, the one or more lipids comprise cholesterol.
- 9) The composition of claim 7, the one or more lipids comprise 50-100 [90?] mol% DPPC and 0-50 mol% cholesterol.
- 10) The composition of claim 7, the one or more lipids comprise 50-65 mol% DPPC and 35-50 mol% cholesterol.
- 11) A process for making a platinum aggregate comprising the steps of:

- (a) combining an active platinum compound and a hydrophobic matrix carrying system;
- (b) establishing the mixture at a first temperature; and
- (c) thereafter establishing the mixture at a second temperature, which second temperature is cooler than the first temperature;

wherein the steps (b) and (c) are effective to increase the encapsulation of active platinum compound.

- 12) The process of claim 11, further comprising sequentially repeating the steps (b) and (c) for a total of two or more cycles.
- 13) The process of claim 11, wherein the active platinum compound solution is produced by dissolving active platinum compound in a saline solution to form a platinum solution.
- 14) The process of claim 13, wherein the active platinum compound is cisplatin
- 15) The process of claim 11, wherein the hydrophobic matrix carrying system comprises liposome or lipid complex-forming lipids.
- 16) The process of claim 15, wherein the one or more lipids comprise DPPC.
- 17) The process of claim 15, wherein the one or more lipids further comprise cholesterol.
- 18) The process of claim 11, wherein the hydrophobic matrix carrying system is produced by dissolving one or more lipids in ethanol to form a lipid solution and injecting the lipid solution into an aqueous medium containing active platinum compound.
- 19) The process of claim 11, further comprising sequentially repeating the steps (b) and (c) for a total of three or more cycles.
- 20) The process of claim 19, wherein the step (c) comprises establishing the mixture at a temperature from -25 degrees Celsius to 25 degrees Celsius.

- 21) The process of claim 19, wherein step (c) comprises establishing the mixture at a temperature from -5 degree Celsius to 5 degrees Celsius.
- 22) The process of claim 19, wherein the step (b) comprises establishing the mixture at a temperature from 4 degrees Celsius to 75 degrees Celsius.
- 23) The process of claim 19, wherein the step (b) comprises establishing the mixture at a temperature from 45 degrees Celsius to 55 degrees Celsius.
- 24) The process of claim 11, wherein the temperature differential between steps (b) and (c) is 25 degrees Celsius or more.
- 25) The process of claim 24, wherein the temperature established in step (b) is 50 degrees Celsius or more.
- 26) The process of claim 11, wherein the temperature established in step (b) is 50 degrees Celsius or more.
- 27) A platinum aggregate produced by the method of claim 11.
- 28) A platinum aggregate produced by the method of claim 14.
- 29) A pharmaceutical formulation comprising the composition of claim 1 and a pharmaceutically acceptable carrier or diluent.
- 30) A pharmaceutical formulation comprising the composition of claim 1, adapted for inhalation by a patient.
- 31) A pharmaceutical formulation comprising the composition of claim 1, adapted for injection into a patient.

32) The process of claim 11, further comprising, after all of steps (b) and steps (c) have been completed:

- (d) removing un-entrapped active platinum compound by filtering through a membrane having a molecular weight cut-off selected to retain desired liposomes or lipid complexes and adding a liposome or lipid complex compatible liquid to wash out un-entrapped active platinum compound.